

**(C) REMARKS**

In this Office Action, the Examiner accepts claims 1–4, for which applicant is grateful. However, the Examiner rejects independent claim 5 under 35 U.S.C. §101 as describing types of mathematical subject matter (such as a "mathematical algorithm", "mathematical formula", or "mathematical equation") not entitled to patent protection standing alone.

Claim 5 is amended to include the steps of "constructing a downgoing wavefield for each frequency in the seismic data" (with a basis in the discussion of the source wavefield  $D$  at paragraph [0060] in the specification as filed), "constructing an upgoing wavefield for each frequency in the seismic data" (with a basis in the discussion of the recorded wavefield  $U$  at paragraph [0061] in the specification as filed), and "calculating a reflectivity at a spatial location from the downgoing and upgoing wavefields using a least squares approach with a pre-whitening factor" (with a basis in the discussion of the second embodiment for computing reflectivity at paragraph [0062] in the specification as filed).

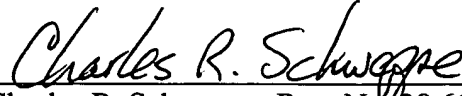
Thus, claim 5, as amended, now contains additional non-mathematical steps and thus does not describe mathematical subject matter, the equation for reflectivity  $R(x)$ , standing alone.

In addition, the Examiner rejects independent claim 5 under 35 U.S.C. §112, second paragraph, for having insufficient antecedent basis for the four limitations "the spatial location", "the number of frequencies", "the upgoing wavefield", and "the downgoing wavefield". Claim 5, as amended, now contains antecedent basis for all four limitations cited by the Examiner.

Therefore, applicant believes that claim 5 is now also ready for acceptance. Applicant respectfully requests the favorable consideration and allowance of this application.

Date: January 24, 2007

Respectfully submitted,

A handwritten signature in cursive script that reads "Charles R. Schweppe". The signature is written in dark ink and is positioned above a horizontal line.

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